Appl. No. 10/631,124
Response dated 08/29/05
Reply to Restriction Requirement of 08/19/05

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of the Claims:

1. (original) A single acentric, rhombohedral lanthanide borate crystal comprising the formula $LnBO_3$, wherein Ln is selected from the group consisting of Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, and Y, and having a dimension of at least 1 mm in at least one direction.

2. (original) The lanthanide borate crystal set forth in claim 1 wherein the crystal exhibits non-linear optical properties.

3. (original) An acentric, rhombohedral lanthanide borate crystal comprising the formula $Ln_yLn_xBO_3$, wherein Ln_x is selected from the group consisting of Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, and Y and wherein Ln_y is selected from the group consisting of La, Ce, Pr, Nd, Y, Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu and Cr and mixtures thereof, wherein Ln_x and Ln_y are differing ions and wherein the molar ratio of $Ln_y:Ln_x$ is from about 1:99 to about 20:80.

2

Appl. No. 10/631,124
Response dated 08/29/05
Reply to Restriction Requirement of 08/19/05

4.   (original)   The lanthanide borate crystal set forth in claim 3 comprising an

active gain medium for a laser.

5.   (original)   The lanthanide borate crystal set forth in claim 4 wherein the

lasing crystal comprises a self-frequency doubler.

6.   (withdrawn)   A method for growing a single rhombohedral lanthanide

borate crystal comprising :

reacting B_2O_3 and Ln_2O_3, wherein Ln is selected from the

group consisting of Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm,

Yb, Lu, and Y, in an aqueous solution at a temperature of

from about 350°C to about 600°C and at a pressure of from

about 8 kpsi to about 30 kpsi.

7.   (withdrawn)   The method set forth in claim 6 wherein the step of reacting

B_2O_3 and Ln_2O_3 comprises reacting B_2O_3, $(Ln_x)_2O_3$, and $(Ln_y)_2O_3$ wherein Ln_x

is selected from the group consisting of Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm,

Yb, Lu, and Y and wherein Ln_y is selected from the group consisting of La,

Ce, Pr, Nd, Y, Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu and Cr and

mixtures thereof, wherein Ln_x and Ln_y are differing ions and wherein the

molar ratio of $(Ln_x)_2O_3$ and $(Ln_y)_2O_3$ to B_2O_3 is 1:1 and wherein the molar

ratio of $(Ln_x)_2O_3$ to $(Ln_y)_2O_3$ is from about 99:1 to about 80:20.

3

Appl. No. 10/631,124
Response dated 08/29/05
Reply to Restriction Requirement of 08/19/05

8.   (original)   A single acentric, rhombohedral lanthanide borate crystal
comprising the formula $LnBO_3$, wherein Ln is selected from the group
consisting of Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, and Y, made by
the method comprising:

reacting B_2O_3 and Ln_2O_3, wherein Ln is selected from the
group consisting of Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm,
Yb, Lu, and Y, in an aqueous solution at a temperature of
from about 350°C to about 600°C and at a pressure of from
about 8 kpsi to about 30 kpsi.

9.   (original)   The lanthanide borate crystal set forth in claim 8 comprising a
dimension of at least 1 mm in at least one direction.